

ESBE SL Pump Control Set Installation and Commissioning Manual

Single-loop underfloor heating with thermostatic mixing valve.

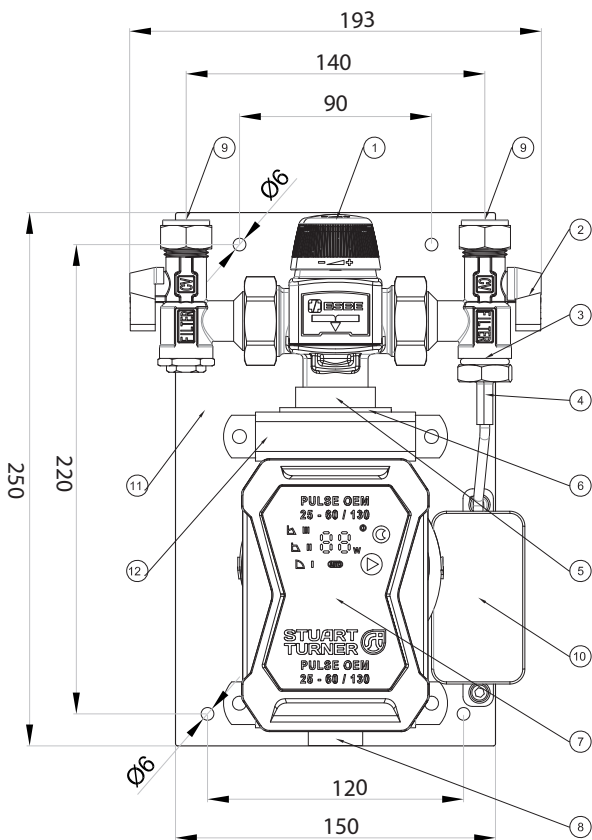
Boxed and pre-assembled ready for installation, including:

- ESBE Thermostatic mixing valve adjustable from 35°C to 60°C
- Temperature switch for pump control on inlet water temperature - 40°C
- 'A' rated Stuart Turner 25/6 Pump
- ½" BSP female connection to underfloor flow and return
- Nickel plated for improved appearance
- In-built isolation valve in flow/return elbow
- 15mm compression connection flow and return
- TMV body kvs 1.3
- Mounted pump control terminal box

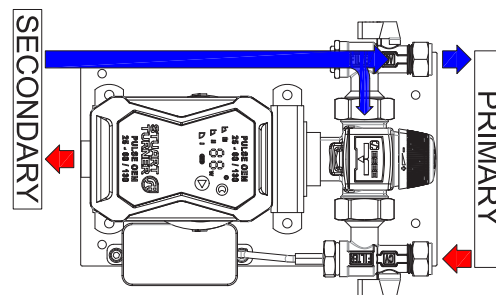
1. General

- 1.1** Provides control of flow and return water temperature in an underfloor heating system. Pre-assembled and tested to ensure that it can be fitted with minimum on-site labour required and commissioned immediately once fitted.
- 1.2** Designed to connect to new and existing heating systems with 15mm compression connections for the flow and return. The temperature switch supplies power to the pump and will remain open until the water temperature exceeds 40°C. Following this, the switch closes and activates the pump, which will allow the TMV to mix the flow and return to the required UFH temperature.

2. Connections & Dimensions



Item	Description	Qty
1	ESBE 35-60 Thermostatic Mixing Valve	1
2	Isolation Ball Valve	2
3	½" BSP Female Adaptor	1
4	Temperature Switch 40°C	1
5	1" BSP X 1 ½" Flange Adaptor	1
6	1 ½" Pump Flange Nut	1
7	Stuart Turner 25/6 Pump	1
8	½" BSP Female Adaptor	1
9	½" Compression Connections	1
10	Junction Box	1
11	Wall Mounting Plate	1
12	Munsen Ring Clip	1



3. Technical Data

Maximum static pressure	10 Bar
Maximum differential pressure	3 Bar
Maximum temperature	95°C
Operating temperature range	Adjustable between 35°C and 60°C
Inlet connections	15mm compression
Outlet connections	1 ½" BSP FEMALE
Temperature switch	40°C
Kvs	1.6
Material	Nickel plated brass
Voltage	230V

4. Installation

- 4.1 Carefully remove from the packaging and check that all components are in place and that nothing has been damaged during delivery.
- 4.2 Supplied for connection with return to the left-hand side but can be altered easily for connection to the right-hand side.
- 4.3 To change orientation:
 - a) Using an appropriate spanner, loosen the rotating flange nut securing the mixed outlet of the TMV to the pump inlet.
 - b) The upper assembly can then be rotated through 180°, reversing the connections. Care should be taken not to over stretch the cable connection to the temperature switch.
 - c) Re-tighten pump flange nut.
- 4.4 The pump mixer can be attached to the heating system. Using the dimensions shown in Fig. 1, ensure that there is enough available space for installation and maintenance at the intended position.

5. Commissioning

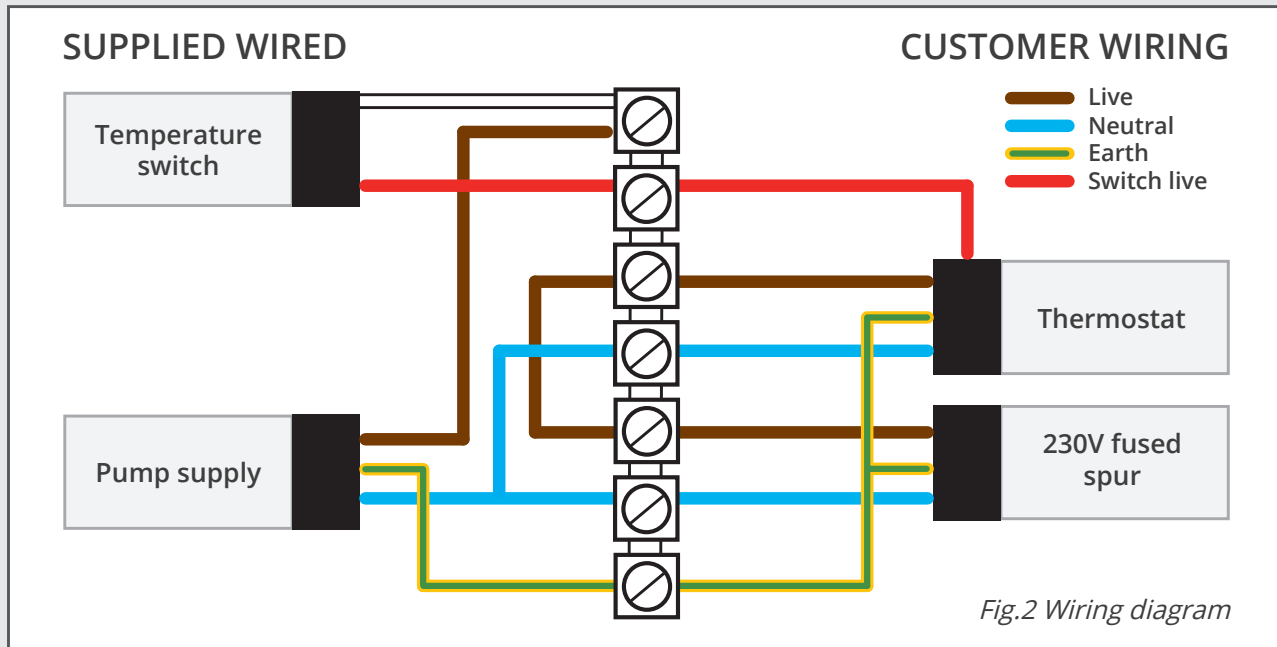
- 5.1 Filling the UFH system: The TMV is set to allow the return flow port to be partly open at all times. Therefore, care should be taken to ensure the UFH is fully filled and does not bypass through the TMV.
- 5.2 The pump mixer and underfloor circuits can now be filled and commissioned in accordance with the manifold instructions. Prior to filling, a final check of all joints should be made to ensure no connections have loosened during transit.
- 5.3 Ensure that the pump is filled and vented. Operate the control system to call for heat and select the desired pump setting.
- 5.4 Wiring should be carried out by a competent electrician using the wiring diagram in Fig. 2 on the following page.
- 5.5 Flow temperature can be adjusted using the dial on the ESBE TMV (35-60°C).

Warning – Thread sealed joints should not be rotated as this will break the seal and invalidate the warranty.

6. Wiring



A 3 Amp mains-fused spur is required for the electrical wiring. The pump pack automatically detects radiator or mains heating circuit activity using an in-built temperature control switch.

6.1 Use the junction box included to wire your thermostat and fused spur.



7. Pump Settings




Buttons

All pump functions can be controlled with two buttons. The  button switches the night reduction function on and off. The  button controls the operating modes. The selected operating mode is shown in the clear field of the LED indicator.



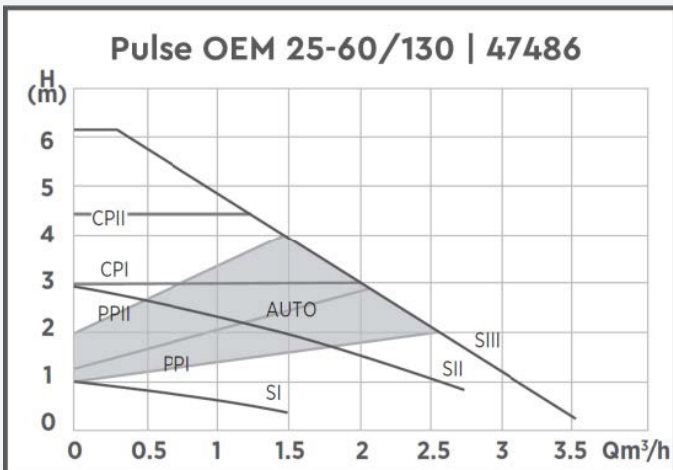
Service Mode, setting the capacity range

The capacity range can be changed to 4m or 6m in service mode.

- Pump must be disconnected from the 230V mains voltage for at least 15 seconds
- Connect the pump to the 230V mains voltage
- Press the  and  buttons simultaneously with 3 seconds
- Release both buttons
- Select the capacity range with the  button
- - 4 = 4m
- - 6 = 6m
- Pump must be disconnected from the 230V mains voltage for at least 15 seconds
- Connect the pump to the 230V mains voltage

7. Pump Settings (Continued)

Technical data



Control panel and LED display

1. Display of energy consumption in watts
2. Automatic night reduction display
3. Button for activating the automatic night reduction
4. Operating mode selection button
5. Display for activated AUTO Smartadapt mode
6. Display of the nine operating levels (characteristics) of the pump

Number of button presses	Display	Description	Symbol Display
0	AUTO (selected on supply)	AUTO Smartadapt	
1	PP1	Min. proportional pressure adjustment	
2	PP2	Average proportional pressure adjustment	
3	CP1	Min. constant pressure adjustment	
4	CP2	Average constant pressure adjustment	
5	I	Constant speed adjustment I	
6	II	Constant speed adjustment II	
7	III	Constant speed adjustment III	
8	AUTO	AUTO Smartadapt	

Malfunctions, causes and elimination

Maintenance work or repair attempts may only be performed by qualified personnel. Before conducting maintenance, cleaning and repair work, disconnect the system from the power supply and secure it against being switched on again by unauthorized persons. At high water temperatures and system pressures, wait for the pump to cool down beforehand. **There is risk of burns!**

Malfunction designation or pump error code	Possible cause	Remediation solution
The pump does not work, the display does not light up	Power error	Check the supply voltage at the pump. If necessary, switch the circuit breaker back on.
The pump works but delivers no water	Air in the system	Vent the pump (see chapter 8 in the manual).
	The valve is closed	Open the gate valve
Noise in the system	There is air in the system	Vent the system
	Pump capacity is too high	Check pump settings
The pump is making noise	Air in the pump	Vent the pump (see chapter 8 in the manual).
	System pressure is too low	Increase the pressure on the supply
	Defective expansion vessel	Check the amount of gas in the expansion vessel
The building does not heat up	Incorrect pump setting	Increase the setpoint (see chapter 7.3 in the manual)
	Night reduction can be switched on	Switch off night reduction
No automatic power adjustment in proportional pressure levels	An open overflow valve installed in the system makes it impossible to control	Remove or close the overflow valve, if possible.

Our other UFH products:



Thermostatic Pump Pack

The ESBE T4 pump pack is designed to control the UFH flow temperature between 20°C-55°C (BS1264 forced screed drying). Complete with ESBE 3.4kv 4-port thermostatic mixing valve, 'A' rated pump, built-in check valve and temperature gauge. Offering pipe centres of 210mm, 200mm and 225mm, fully reversible with side or bottom entry primary connections. This unit is suitable for use with floor areas up to 220sqm or a max output of 18kW.



Heat Pump Pack

The heat pump model is a pre-assembled unit that is designed to be connected (via ball valves) to the manifold. The unit is for use in applications where water temperature controls are not required. This is typically seen where heat pumps or low temperature systems are utilised.

The unit includes an 'A' rated energy efficient pump and is suitable for use with floor areas up to 250sqm or a maximum output of 20kW. Primary flow and return connections can be made from the side or the bottom of the unit. This can also be mounted on either the left- or right-hand side of the manifold.

